

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 1874-SPL	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 03/28020	International filing date (day/month/year) 08/09/2003	(Earliest) Priority Date (day/month/year) 06/09/2002
Applicant THE JOHNS HOPKINS UNIVERSITY		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

TRANSITIONS IN REFRACTIVE INDEX USING ELECTRO-OPTIC POLYMERS

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

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☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 03/28020

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The index of refraction of the doped regions (1 - 5) in a length of doped and/or "doped-and-poled" electro-optic polymers is controlled so that a gradual transition from a small difference in refractive index between the doped and the undoped (core) regions (Δn) to a large Δn , or vice versa, is achieved for use in, for example, a lightguide-to-fiber transition. Multiple methods for creating this gradual transition are disclosed.

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G02B6/12 G02B6/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	INABA R ET AL: "TWO-DIMENSIONAL MODE SIZE TRANSFORMATION BY DELTAN-CONTROLLED POLYMER WAVEGUIDES", JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE. NEW YORK, US, VOL. 16, NR. 4, PAGE(S) 620-624 XP000768969 ISSN: 0733-8724	1,12
Y	the whole document	2-11, 13-22
X	KOWALCZYK T C ET AL: "GUEST-HOST FLUORINATED POLYIMIDES FOR ELECTRO-OPTIC APPLICATIONS", MOLECULAR CRYSTALS AND LIQUID CRYSTALS SCIENCE AND TECHNOLOGY. SECTION B. NONLINEAR OPTICS, GORDON AND BREACH SCIENCE PUBLISHERS,, US, VOL. 14, NR. 1/4, PAGE(S) 185-195 XP000577789 ISSN: 1058-7268 the whole document	1,12

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

'A' document defining the general state of the art which is not considered to be of particular relevance

'E' earlier document but published on or after the international filing date

'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

'O' document referring to an oral disclosure, use, exhibition or other means

'P' document published prior to the international filing date but later than the priority date claimed

'T' later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

'Y' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

'&' document member of the same patent family

Date of the actual completion of the international search

11 February 2004

Date of mailing of the international search report

19/02/2004

Name and mailing address of the ISA

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Anderson, C

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 155 793 A (BROUSSOUX DOMINIQUE ET AL) 13 October 1992 (1992-10-13) column 6 ---	2-9, 13-20
Y	US 5 175 788 A (MIURA KAZUNORI ET AL) 29 December 1992 (1992-12-29) column 3, line 44 -column 4, line 50 ---	2-9, 13-20
Y	US 5 729 641 A (LAROSE GILLÉS ET AL) 17 March 1998 (1998-03-17) column 3 ---	10,11, 21,22
A	US 6 067 387 A (HWANG WOL YON ET AL) 23 May 2000 (2000-05-23) the whole document ---	1-22
A	EP 1 199 582 A (LUCENT TECHNOLOGIES INC) 24 April 2002 (2002-04-24) paragraph '0007! paragraph '0019! -----	1,12

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5155793	A	13-10-1992	FR	2658620 A1	23-08-1991
			EP	0442796 A1	21-08-1991
			JP	4214505 A	05-08-1992
US 5175788	A	29-12-1992	JP	3288102 A	18-12-1991
US 5729641	A	17-03-1998	NONE		
US 6067387	A	23-05-2000	NONE		
EP 1199582	A	24-04-2002	US	6658183 B1	02-12-2003
			EP	1199582 A1	24-04-2002
			US	2002114574 A1	22-08-2002